Review

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China's achievements and challenges in improving health insurance coverage

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Summary **China has undertaken waves of healthcare reforms to keep pace with its rapid economic growth. By 2011, universal health insurance coverage was successfully achieved through the creation of a basic social medical insurance system. Growing economic power, extensive government subsidies, and strategies for program implementation are critical to that achievement. However, the breadth and depth of coverage varies considerably across insurance schemes and localities. The disjointed insurance scheme led to inequality in coverage, accessibility, and affordability of medical services, lopsided allocation of health resources, and increasing medical expenditures, and these remain crucial challenges for healthcare insurance coverage. This paper describes societal conditions, polices, achievements and challenges in improving health insurance coverage in China. Thailand's experience in universal health insurance coverage and its implications for China's new medical reform are also discussed. Solutions including sustainable increases in government investment, transformation of payment methods, reinforcement of primary health care delivery and the referral system, and standardization of benefits packages are strongly recommended to address challenges in China's long-running medical reform.**

Keywords: Health insurance, universal coverage, healthcare reform, China

1. Introduction

China has made remarkable advances in economic growth during the past several decades. However, the health care system in China has not kept pace with economic growth (*1,2*). Many residents still have difficulty obtaining access to healthcare when ill. Health insurance coverage for the population declined and has remained very low for a number of years (*3*). The outbreak of severe acute respiratory syndrome (SARS) in 2003 sounded a wake-up call for Chinese leaders who had failed to pay close attention to the public's concerns (*4,5*). In 2007, China's health system was ranked 144th in terms of quality and access out of 190 countries by the World Health Organization (WHO), far below poorer countries like Haiti (*6*). The enormous discrepancy between health system development and economic advancement motivated the Chinese government to implement a system-wide Healthcare Reform Plan (*3*). The central government of China has started to focus more on the reform of health insurance to sustain economic development and is committed to providing universal health insurance coverage to 1.3 billion people (*4*). Although China faced great challenges in making health insurance more accessible and affordable, marked changes have been made in China's health system over the past three decades (*4,7*).

2. China's achievement of universal health insurance coverage

2.1. *Societal conditions for improving health insurance coverage*

In the early decades after the founding of the People's Republic of China, China's health insurance system was revered by other countries because of its extensive coverage (*8*). In urban areas of China, the Labor

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Table 1. Summary of China's three public insurance schemes in 2011 (*4*).

Items	UEBMI	URBMI	NRCMS
Year initiated	1998	2007	2003
Individuals covered	Urban employees	Urban unemployed, elderly, children, students, and disabled	Rural residents
Nature of employment	Mandatory	Voluntary	Voluntary
Unit of enrollment	Individuals	Individuals	Households
Risk-pooling unit	City	City	Country
Enrollment rate (%)	92	93	97
Number of enrollees (million)	252	221	832
Premium per person per year (US$)	240	21	24
Including government subsidy (US$)	0	18	18
Benefit coverage			
Inpatient reimbursement rate (%)	68	48	44
% of counties or cities covering general outpatient care	100	58	79
Predominant payment method	FFS	FFS	FFS

Insurance Scheme for employers was started in 1951 as an employment-based health insurance scheme (*4*). In 1952, a public insurance scheme called the Government Insurance System was launched for government employees, their dependents, and college students (4). Almost all urban residents were covered by health insurance plans until the late 1970s (*9*). In rural areas of China, the Cooperative Medical Scheme was launched in the late 1950s (*4*). Each rural commune organized its own commune-based medical scheme and provided medical services to its members and their families with minimum charges (*8*). Approximately 90 percent of rural residents were insured through the scheme in the mid-70s, representing the vast majority of the rural population (*8,10*).

However, the aforementioned health insurance schemes disappeared, and insurance coverage surprisingly decreased as economic reforms were initiated in 1978 (*3*). In the countryside, the collective farming mechanisms were replaced by a new "household responsibility system", leading to the collapse of the commune-based Cooperative Medical Scheme (*11*). Consequently, rural residents had no health insurance and paid all medical expenses themselves, resulting in a high risk of suffering illness-induced poverty (*12*). A study reported that health insurance coverage for the rural population declined to 12% in 1993 and to 9% in 1998 (*13*). Similarly, in urban area, health insurance schemes for employees also gradually disappeared due to rising health care costs and inefficiency of state-owned enterprises (*4,14*). Privatization efforts in the public health care sector led to overuse and decreased the quality and affordability of health care (*3*). Moreover, market-oriented economic reforms and privatization caused millions of employees to lose their jobs, as well as their health insurance coverage, in the 1990s (*15*). Insurance coverage for urban residents decreased to 53% in 1993 and to 42% in 1998 (*13,14*).

A point worth noting is that these data indicate that inequities in health care between urban and rural areas grew as insurance coverage decreased. The inequities were exacerbated by the increased income gap between rural and urban areas (*16*). People in rural areas had less ability to pay and a higher likelihood of having limited access to health care due to financial reasons than urban residents. Deteriorating insurance coverage and the rapid increase in health care costs led to health care affordability becoming a leading public concern (*17*). However, the extent of coverage did not truly alarm Chinese leaders until the outbreak of severe acute respiratory syndrome (SARS) in 2003, which strongly impacted China's health-care system and economy (*5*). Chinese leaders became aware of underinvestment in the health care system and the urgent need to implement fundamental reform. A number of policies and interventions were introduced to enhance the health insurance system in order to provide universal coverage by 2020 (*18*).

2.2. *Policies and achievements in improving health insurance coverage*

To promote insurance coverage, the Chinese government implemented systematic schemes (as shown in Table 1) (*4*), including the New Rural Cooperative Medical Scheme (NRCMS) in rural areas and the Urban Employee Basic Medical Insurance (UEBMI) and Urban Resident Basic Medical Insurance (URBMI) in urban areas. Together, these three insurance schemes constituted China's basic social medical insurance system and rapidly expanded the extent of coverage so that 95% of the total Chinese population was insured by 2011 (*19*).

NRCMS, a government-led voluntary insurance scheme, was initiated in 2003 to improve access to health insurance for rural residents (*20*). Unlike mandatory insurance, the NRCMS is operated and organized by county. The central government linked allocation of its subsidies to the extent of the population covered in each country, giving local governments a strong incentive to expand the extent of coverage. Enrollment in the NRCMS is usually based on households rather than individuals, which is as one of

the most effective approaches for rapid expansion of coverage (*20,21*). Funds for the NRCMS are jointly provided by the central government, local governments, and rural households, with a ratio of contribution of 2:2:1 (*i.e.*, 80% from the government and 20% from rural residents) (*20,22*). Government has continuously increased subsidies for the NRCMS, which is crucial to expanding coverage. By 2011, government subsidies accounted for 75% of premiums for the NRCMS (*23*). The average annual flat-rate premium per capita of the NRCMS was 113 RMB in 2009 (*24*), and that amount increased to 246 RMB in 2011 and to 500 RMB in 2015 (*25*). The benefits package and reimbursement of medical expenses for enrollees in the NRCMS were decided by county governments based on their financial status. In the first five years, the NRCMS prioritized coverage of inpatient medical care throughout the country. A study reported that the effective inpatient reimbursement rate was around 44% in 2011 (*4*). Coverage of outpatient services coverage was expanded gradually, and more funding has been allocated to cover outpatient services in most counties (*20*). According to statistics, 79% of counties covered general outpatient care and 89% of counties covered outpatient care for major and chronic diseases in 2011 (4). In addition to the policies and schemes mentioned earlier, other approaches, including simplification of procedures for enrollment and reimbursement and public service campaigns touting benefits from the NRCMS, were adopted to attract enrollment and expand coverage (*20*). As government subsidies increased and the scheme's benefits improved, enrollment in the NRCMS gradually increased from 21% in 2003 to 97% in 2011, so more than 830 million people are covered (*19*).

To improve health insurance coverage in urban China, the UEBMI was implemented in 1998 to cover the urban employed and the URBMI was implemented in 2007 to cover urban residents (*19*). The UEBMI scheme, which was intended to cover urban employees and retirees but not their families, was launched in two medium-sized cities (Zhenjiang and Jiujiang) in 1994 and spread nationally in 1998 (*7*). UEBMI premiums, paid jointly by employers and employees, are equivalent to 8 percent of an employee's monthly pay, with 6 percent from the employer and 2 percent contributed by the employee (*7*). The premium for retired workers was paid by their former employers. Enrollment in the UEBMI is based on individuals and local governments are responsible for operating the UEBMI, with flexibility to adjust policies regarding implementation and reimbursement. The benefits packages of the UEBMI are designed to cover not only inpatient medical care but also outpatient services, including medical services for major and chronic diseases (*4*). A study reported that the effective inpatient reimbursement rate for the UEBMI was about 68% in 2011 (*4*). Thus far, the UEBMI has been the most generous public insurance scheme, with premiums per person per year as high as 240 US$ (equivalent to about 1,500 RMB) and coverage extending to 92% of eligible individuals in 2010 (*4*).

The URBMI was launched with substantial government subsidies and is highly similar to NRCMS in design. Its chief enrollees include children, elderly, college students, and unemployed urban residents not covered by the UEBMI scheme (*26*). Enrollment in the URBMI is voluntary and it is based on individuals. URBMI premiums are also jointly financed by the individual and central and local governments. The government contribution accounted for 85% of premiums for the URBMI by 2011 (*23*), so the insurance scheme has become a very attractive investment option. Local health insurance bureaus are responsible for determining financing levels from the government, which vary depending on the financial status of the region and the individual. The premium per person per year was about 21 US$, with 18 US$ from government subsidies, in 2011 (*4*). When the URBMI started, its benefits packages covered only inpatient services. A study reported that the effective inpatient reimbursement rate for the URBMI was 48% in 2011 (*4*). Outpatient care was gradually covered, with 58 % of cities covering general outpatient care and 83% of cities covering outpatient care for major and chronic diseases by 2011 (*4*). As government subsidies increased, coverage reached 93% in 2010 (*23*).

3. Challenges in and prospects for improving health insurance coverage

Although the achievement of extensive health insurance coverage is remarkable, a number of challenges have hindered progress in providing universal healthcare coverage. The inequality in coverage, accessibility, and affordability of medical services is a major challenge for healthcare insurance coverage and a significant public concern (*27,28*). The disjointed insurance scheme for residents in urban and rural areas has become a main driver of inequity in healthcare insurance coverage (*29*), which varies considerably in breadth and depth across insurance schemes and localities (*28*). As mentioned in 2.2, the NRCMS and the URBMI have much lower premiums, a lower inpatient reimbursement rate, and smaller benefits packages than the UEBMI has, though the benefits are relatively modest. These three schemes reduced the burden of medical expenses on individuals and households to some extent. Since medical expenses have increased, the proportion of out-of pocket payments for healthcare services remains high, and this is especially true for the rural population (*27*). According to statistics, the proportion of out-of-pocket expenditures to total national health expenditures decreased dramatically from 60% in 2001 to 35% in 2011 at the national level (*4*). In contrast, the proportion of out-of-pocket payments as a share of average annual

Table 2. Attributes of main heath insurance schemes in Thailand during achievement of UC (2002) (*33*).

Items	CSMBS	SSS	UC
Year initiated	1963	1990	2001
Individuals covered	Government employees, retirees, and dependents	Private sector employees	Remaining Thais
Financing sources	General taxpayers	Employers, employees, and government (1.5% contribution by each) to payroll	General taxpayers
Nature of employment	Fringe benefits	Mandatory	Social welfare
Risk pooling	National	National	National
Benefit coverage	Outpatient and inpatient services, health prevention	Same as CSMBS	Same as CSMBS
Predominant payment method	FFS	Capitation	Capitation for outpatient services Global budget plus DRGs for inpatient services

household living expenses for rural residents increased from 5.2% in 2000 to 8.4% in 2011 (*30*). Moreover, a large number of migrants have very limited access to health insurance due to locality-based benefits from the NRCMS and the household registration system (*31*). When seeking medical services, migrants must pay the full cost of services and receive reimbursement when they return to their hometowns (*20*). Information technology has helped the government develop a portable NRCMS. However, the limited coverage of NRCMS benefits means that migrants cannot afford health care costs in cities, leading to a greater financial burden for migrants and inequity in health care (*4*). Fee-for-service (FFS) is the prevailing method of payment in the UEBMI, the URBMI, and the NRCMS, and in government-run medical insurance involving purchasers and third-party payers. Profits give providers strong incentives to over-provide services, leading to over-use of health services and rising costs (*32*).

To address these issues, the government has been working to increase investment and reimbursements in health care insurance. Other payment methods, such as capitation, global budgets, and diagnosis-related groups (DRGs), are conductive to cost containment and have been attempted in some cities (*33*). The integration of the UEBMI, the URBMI, the NRCMS, and medical assistance programs, a promising strategy to develop a uniform standard health insurance system for urban and rural residents, is proceeding along with China's new medical reform, though it faces a variety of challenges (*27,29*). With increased attention from the government and the development of health information technology, the UEBMI, the URBMI, and the NRCMS were basically linked in 2013 to 2014. This also involved merging health insurance for special groups including migrant workers and farmers with no land to cultivate. Pursuant to opinions of the State Council, the URBMI and the NRCMS were integrated and a basic medical insurance system was created for urban and rural residents in each province of the country from 2014 to 2017 (*34*). The UEBMI and the basic medical insurance system for urban and rural residents will presumably be integrated to constitute national health insurance and supplementary medical insurance before 2020 (*35*). National health insurance intends to provide basic medical insurance for all members of the public and to guarantee basic medical services. Supplementary medical insurance will cover a higher level of health care needs (*35*).

4. Thailand's experience

In Thailand, there are three major public health insurance schemes (as shown in Table 2), namely the Civil Servant Medical Benefit Scheme (CSMBS), the Social Security Scheme (SSS), and the universal coverage (UC) scheme (*36*). The CSMBS was initiated in 1963 to cover the government and the SSS was initiated in 1990 to cover the private sector (36). The remaining 30% or so of Thais were left without any medical insurance coverage until the introduction of the UC scheme in 2001. The UC scheme, a tax-funded health insurance scheme, rapidly provided almost universal coverage to the entire population of Thailand by early 2002 (*33,36*). Sustainable tax-funded health financing was found to play a vital complementary role in providing universal coverage and equitable access in Thailand, which is a country in transition that is still developing with a large informal sector (*36*). This pragmatic approach provides a useful reference for another developing country with a massive rural population and urban unemployed residents like China. Unlike China's other insurance schemes, the benefits package of the UC scheme covers outpatient, inpatient, and preventive health services (*33,36*). The comprehensive benefits package was designed to be standardized across the UC, the CSMBS, and the SSS to ensure equity. The UC scheme uses capitation for outpatient services, while it uses global budgets and DRGs for inpatient services to control health expenditures (*33,36*). These methods of payment can be adopted in Chinese cities depending on the fiscal status of local governments. The UC scheme adopted a capitation contract model mandating that enrollees

seek care at designated and contracted district health centers or hospitals (*33,36*). Beneficiaries were required to purchase health services from a primary contractor first and were entitled to receive free care at registered providers. Individuals who failed to purchase services from a primary contractor must pay the full cost of services received. This useful approach to cost containment (*37*) was buttressed by the strength of health care infrastructure supported by shifting health care budgets from urban to rural facilities (*34*), the requirement that new medical graduates being employed providing health services in rural areas for three years (*38*), and services from community and village nurses and health care volunteers (*39*). These policies resulted in extensive coverage for Thailand and are a useful model for China's new medical reform. Reinforcing primary health care delivery and the referral system is critical to implementing a hierarchical medical system and reducing geographical disparities in health care.

5. Conclusion

China has successfully provided universal coverage to 1.3 billion people, representing the largest expansion in insurance coverage in human history. This impressive achievement is attributed to renewed political commitment by top leaders, strong public support, extensive government subsidies, strategies for program implementation, and growing economic power, affording the government the unprecedented opportunity to increase investment in health care (*4*). Nonetheless, there are many challenges to providing universal insurance coverage, including lopsided allocation of health resources, increasing medical expenditures, inequitable health service utilization, and large disparities between urban and rural areas of China (*27,28*). Potential solutions to these challenges include sustainable increases in government investment, transformation of payment methods to control medical costs (*33*), reinforcement of primary health care delivery and the referral system, and standardization of benefits packages through integration of the UEBMI, the URBMI, and the NRCMS (*29*). Thailand's experience in improving the equity and efficiency of its health system and providing universal coverage is a valuable reference for China (*33*). China's political philosophy and its government are committed to improving the well-being of its citizens.

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